Chapter 10 Understanding Map Unit Tables

NASIS separates the soil survey area into two parts: the *area* and the *legend*. The area includes the soil survey area name and total acres. The legend includes the legend name (i.e., detailed soil map legend), status, and correlation date. Legends are linked to survey areas, allowing several legends to be recorded for each soil survey area.

NASIS also separates the map unit into two parts: the *mapunit* and the *data mapunit*. The mapunit includes the map unit symbol, name, and correlation history. The data mapunit includes the map unit composition, physical and chemical properties, and interpretations. Mapunits are linked to one or more data mapunits through the *correlation table*, allowing map unit symbols in different legends to be linked to the same data.

For a graphical view of these concepts, refer to page 1.11 "Soil Survey Areas and Map Units."

Examining the Area Tables

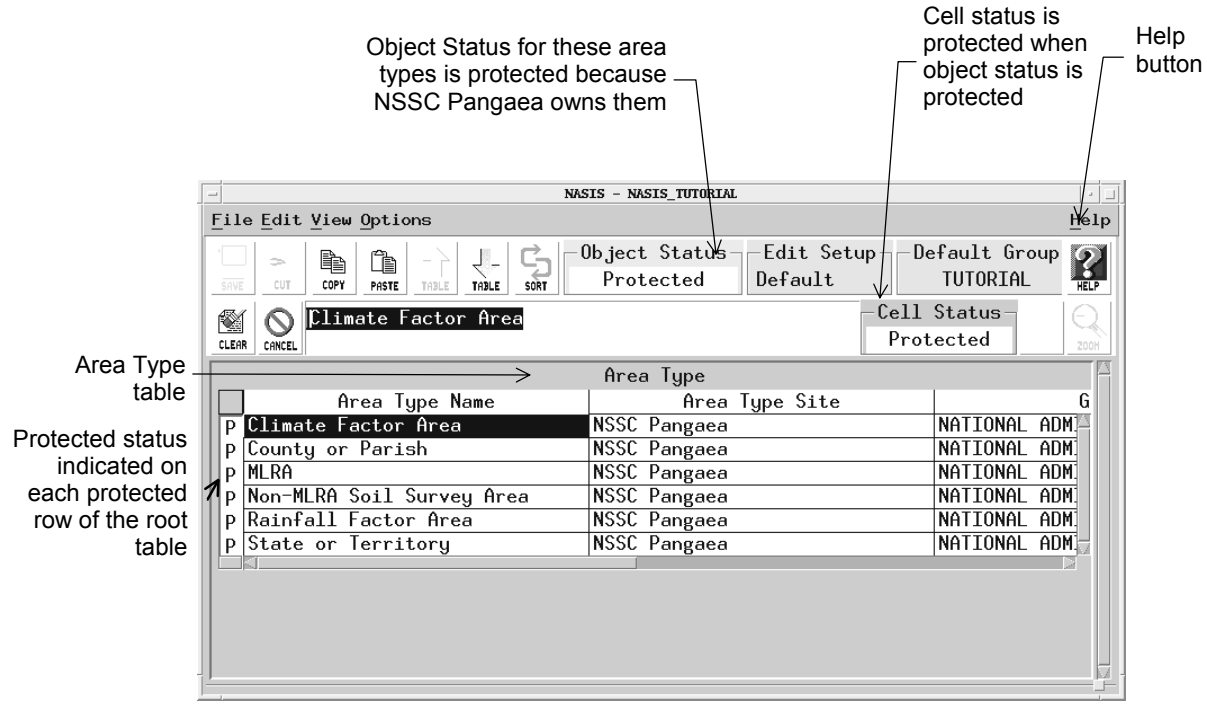
NASIS stores more than just traditional soil survey areas. Because there are several kinds of areas, they are organized by area type. In lesson 6 you practiced moving within and across object boundaries. In this lesson, you will again see the Area and Legend objects, however, this lesson focuses more on the content of the tables and how you will use them to manage the map unit attributes. You will reload the area type information using the same query that you ran in Chapter 5.

1. Reload the area types. On the **File** menu, choose **Select**.
2. On the select manager, choose the **Tutorial - Area types and areas** query and use a wildcard to load all area types. (Review chapter 5, pages 5.2-5.4, steps 3-8 if you need additional instructions).
3. If you have not already done so, open the Area Type table by selecting the **View** menu, **Area Types**, then **Area Type**.

   Note: A sample of area types stored in NASIS appears. NASIS also stores National Park system land, National Forest system land, Military Reservations, Land Resource Regions, and many more.
4. Click **View**, **Area Types**, then **Area Type**. Look at the Area Type window presently displayed on your screen. Notice that in NASIS, you can record climate and rainfall factor areas, and political and physiographic areas, in addition to soil survey areas. Legends are stored only for MLRA and Non-MLRA soil survey area types.
5. Use the horizontal slider to scroll to the right to see all the columns. Notice, too, that the Area Type objects are all protected. These area types are owned by the

NASIS Pangaea database at the National Soil Survey Center in Lincoln, Nebraska.

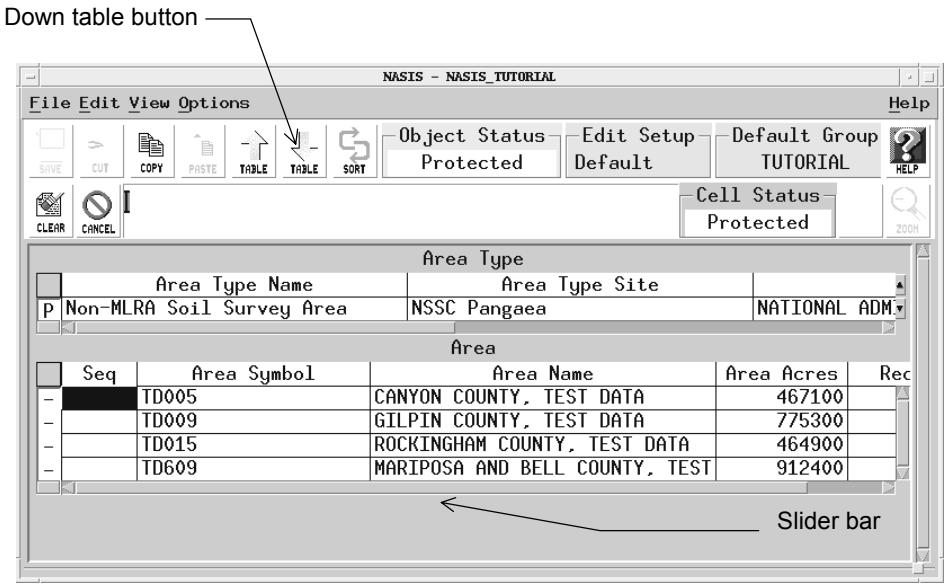
Note: The name Pangaea, also Pangea (pronounced păn-jē′-ə) is the name used by geographers for the supercontinent from which current day continents were derived.



Note: Several ways exist for navigating through tables: clicking with the mouse, clicking the up and down arrow buttons, and using the **TAB** and **SHIFT+TAB** keys or the **ENTER** key. For some data entry actions, using the keyboard is faster. The "References" section of online help contains a keyboard guide.

4. You can get quick help on a particular data element, table name, or screen part. Using the left mouse button, click the **Help** button. The cursor changes into a question mark.
5. Using the mouse, move the question mark cursor to **Area Type** table name. Click the table name. The help system is activated if it isn't already open. An explanation of the Area Type table appears. This, and all table and data element explanations, are designed to help you make your entries in the table. Read the explanation.
6. Referring again to the Area Type table, use the **Help** button to read the explanation of each data element in this table (repeat steps 4-5 for each column name in the table).
7. After examining the Area Type table, click the **Non-MLRA Soil Survey Area** row, then click the **Down table** button.

Note: The displayed Area table lists all the soil survey areas categorized as Non-MLRA Soil Survey Area Type. The Area table contains the soil survey area name, symbol and acres. All soil survey areas converted into NASIS are stored as Non-MLRA Soil Survey Areas.



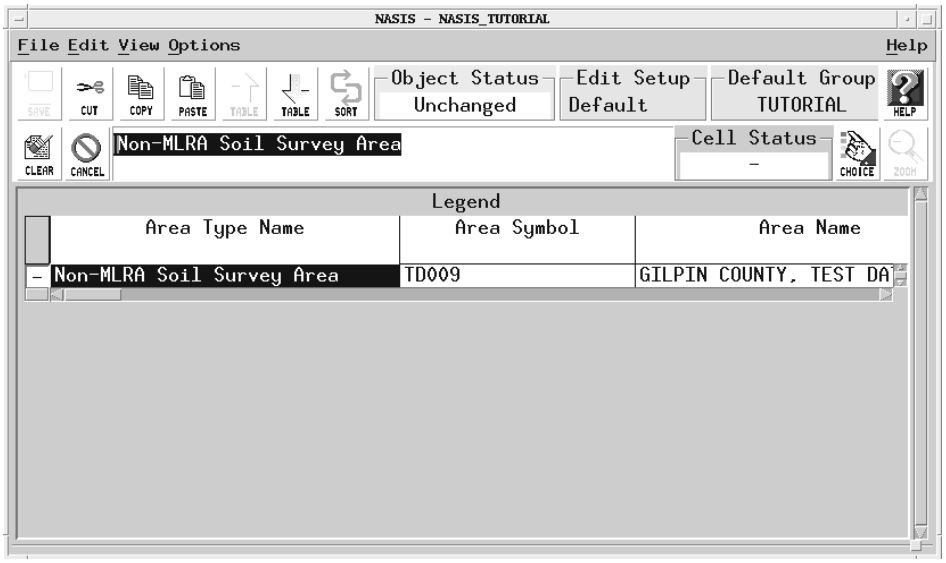
8. Use the slider bar to view columns further to the right.

Examining the Legend Tables

Let's look at a legend in the survey area TD009. Presently, no legends are in the selected set, only the area types and areas that you loaded.

Because the area type object and the legend object are independent, navigating to the legend for a particular survey area (in this case, survey area TD009), requires a leap across object boundaries, as discussed in Chapter 6. To load the legend, you could either run the query with a different target table (Legend), or use the Load Related command.

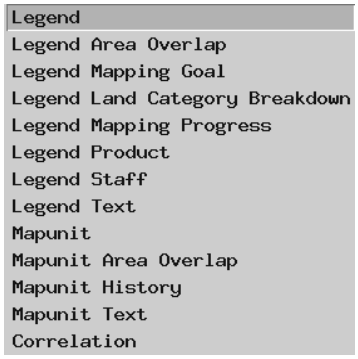
1. To load the legend that belongs to Area TD009, in the Area table click the **TD009** row, then click the **File** menu and select **Load Related**.
2. Choose **Legend** on the Load Related submenu. A message appears indicating that one row was added to Legend Table; click **OK**.
3. To look at the legend, on the **View** menu choose **Legends**, then **Legend**. You see the legend associated with the survey area TD009.
4. Examine each column in the Legend table (resized and shown below), scrolling to the right to view all columns. The Legend table stores the legend description, survey status, correlation date, geographic applicability, certification status, and soil survey schedule data. Remember to use the Help button if you want information about any table or data element.



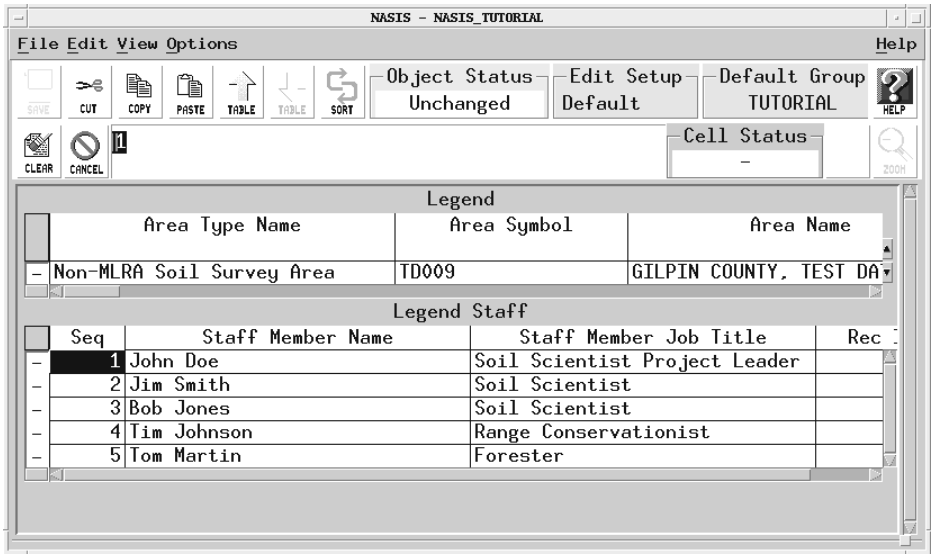
Examining the Soil Survey Goals and Progress data

Several tables have been added to the Legend object to allow Soil Survey Schedule goals and progress to be entered and analyzed in NASIS. The Soil Survey Schedule tables are presented without step-by-step instructions. For now, simply read through this section.

Note: The soil survey schedule examples shown here use a different selected set than the step-by-step exercises found later in this chapter. If you wish to explore these tables on your own later, run the Tutorial - Soil survey area, all data query. Select the Area, Legend and Data Mapunit tables. Enter GIL* for the Area Name in the query parameters dialog. If you do so now, you will need to recreate your current selected set by redoing all steps prior to this section before continuing with the step-by step instructions on pages 11.8-18.

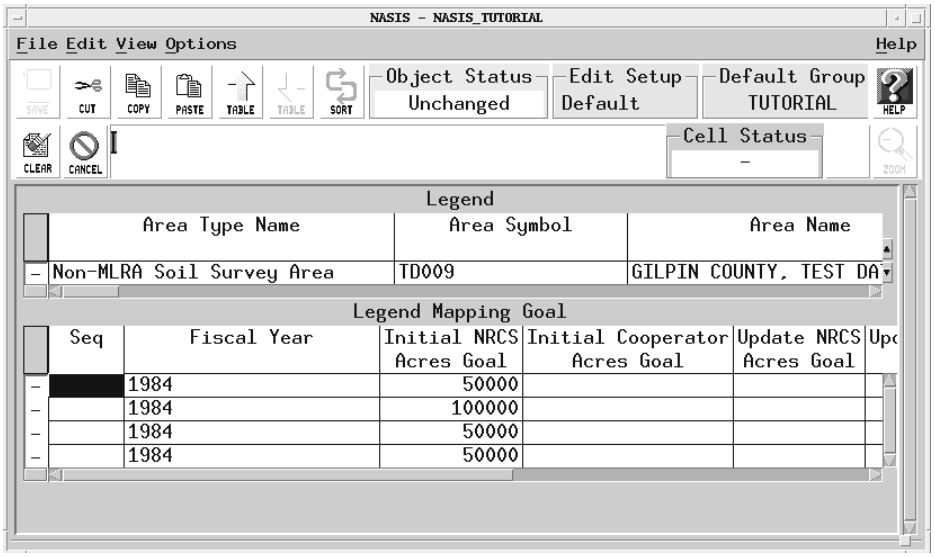


To look at the Legend Staff table, select the **View** menu, **Legends**, then **Legend Staff**.



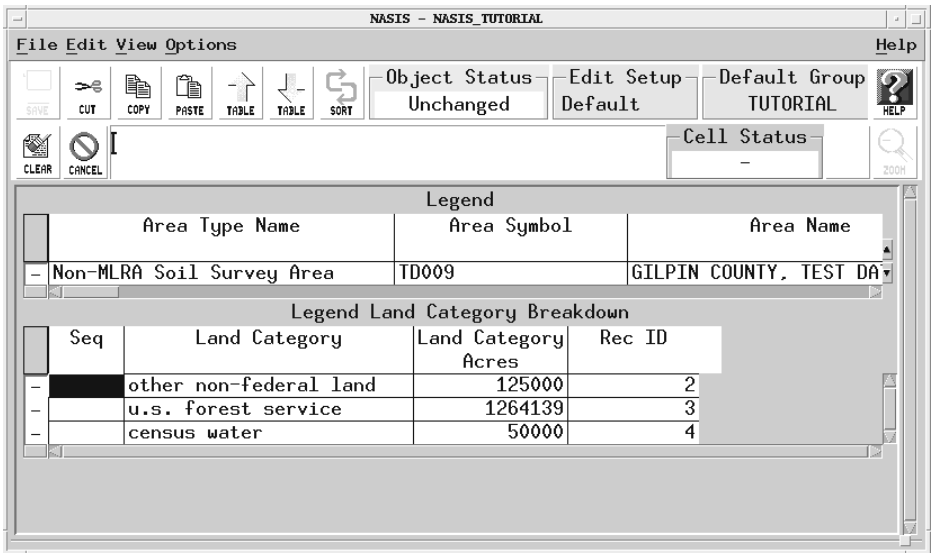
The Legend Staff table records the people who participated in some aspect of a project soil survey. Both NRCS and NCSS cooperator personnel may be listed.

To look at the Legend Mapping Goal table, select the **View** menu, **Legends**, then **Legend Mapping Goal**.

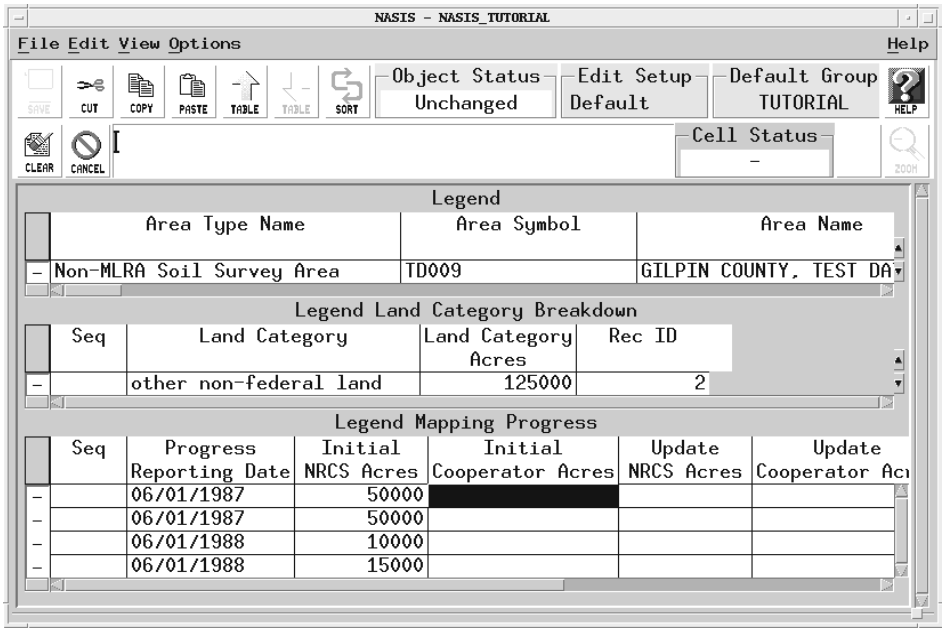


The Legend Mapping Goal table records mapping acreage goals for a soil survey area on a fiscal year basis. The goals for new mapping are recorded independently of goals for update mapping. An individual mapping goal may be associated with a particular member of the soil survey project staff, but such an association is optional.

To look at the Legend Land Category Breakdown table, select the **View** menu, **Legends**, then **Legend Land Category Breakdown**.

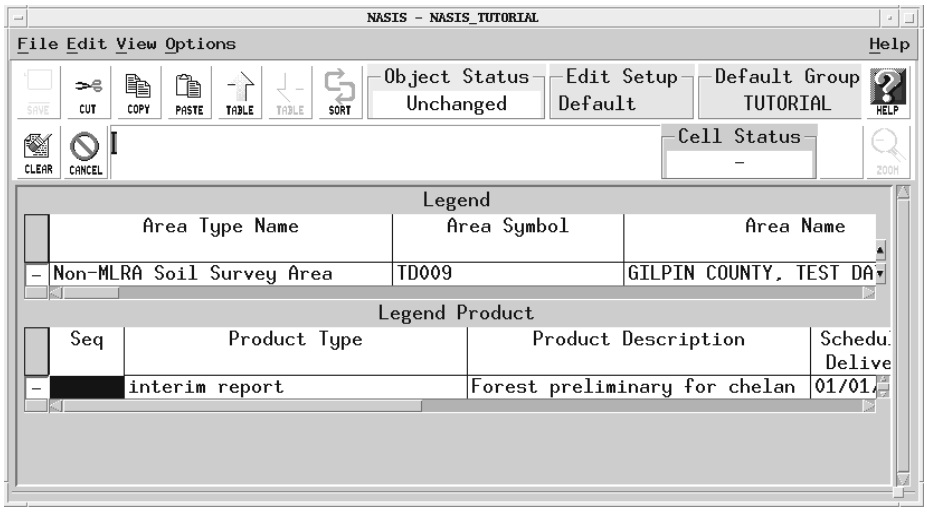


The Legend Land Category Breakdown table records the breakdown of a soil survey area by a standard set of land ownership categories. After examining the Legend Land Category Breakdown table, click in the **Other non-federal land** row, then click the **Down table** button.



The Legend Mapping Progress table records progress of a soil survey area throughout the life of a soil survey project. An individual progress entry records an additional number of acres that have been mapped since progress was last reported, as opposed to cumulative acres mapped to date. Mapping progress for new mapping is recorded independently of mapping progress for update mapping. An individual mapping progress entry may be associated with a particular member of the soil survey project staff, but such an association is optional.

To look at the Legend Product table, select the **View** menu, **Legends**, then **Legend Product**.

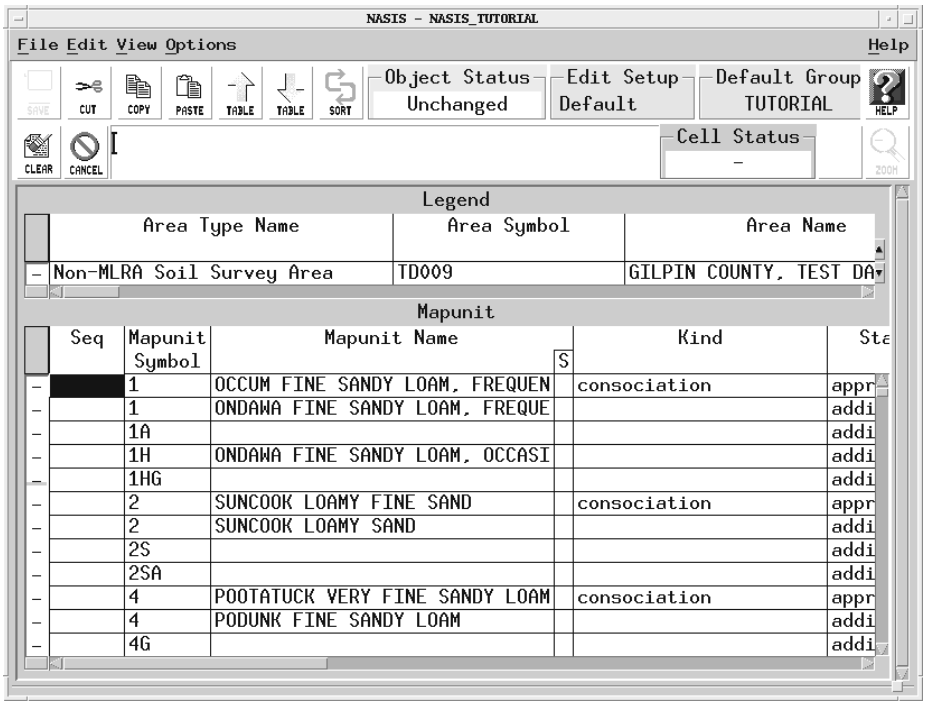


The Legend Product table records all types of final products that are produced for a particular soil survey. Text formatting and editing programs may be tracked independently for each product. Each entry can identify the projected availability of a product, and whether a particular product is still available.

Continuing with the Mapunit Table

1. When you have finished viewing the **Legend** tables, on the **View** menu click **Legends**, then **Mapunit**.

   Note: If you did not go to the goals, progress or products, you should be able to click the **Down table** button and go directly to the Mapunit table.

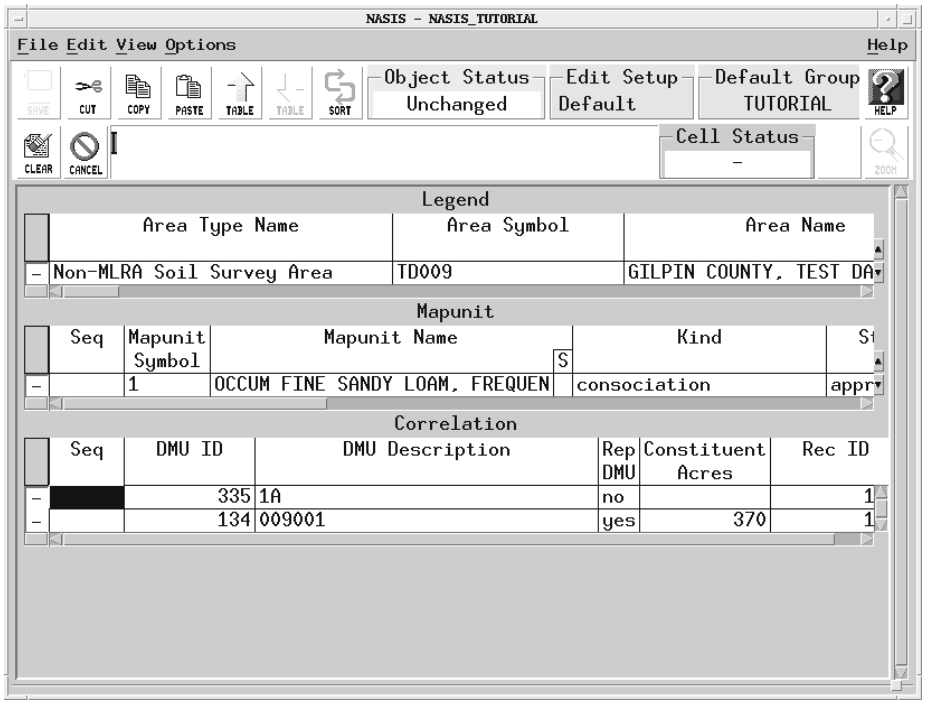


2. Examine each column in the Mapunit table. The Mapunit table contains mapunit symbol, name, total acres, and correlation status. The columns are sorted by mapunit symbol (a pre-determined sort sequence).

   Note: As you look at the Mapunit table, you may be wondering, "If this is the mapunit table, where is the mapunit *data*?" Recall that NASIS separates the map unit name and symbol from the map unit data and that they are linked through the Correlation table.

   Note: The mapunit data associated with mapunit symbols is stored in the Data Mapunit table. Again, you will need to cross the boundaries of two independent objects—Legend and Data Mapunits—while loading only those records related to the specific mapunit.

3. Display the Correlation table for Mapunit Symbol 1—Occum Fine Sandy Loam by first clicking that mapunit in the Mapunit table, then clicking the **Down table** button. The Correlation table links Mapunit Symbol 1 to its actual physical, chemical, and morphological data.



4. In the Correlation table, scroll to the right and notice that one record is designated as a representative Data Mapunit (Rep DMU) and one is not. Highlight the representative Data Mapunit for this Mapunit.

   Note: Currently, your selected set does not contain the data mapunit. It contains the six area type and area records, and one legend record that includes its mapunit symbols and names in the Mapunit table.

5. To load the representative data mapunit for Mapunit Symbol 1, select the **File** menu, **Load Related**, then **Data Mapunit**.

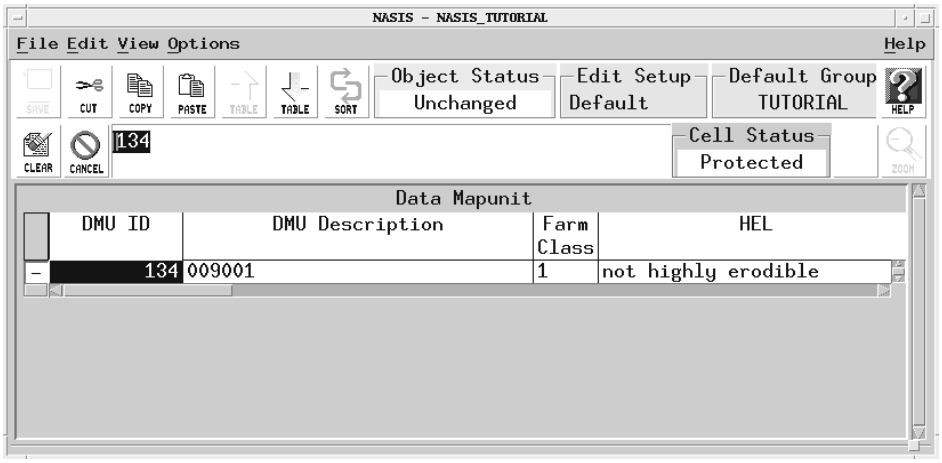
   Note: The DMU Description is a combination of the FIPS code and the map unit symbol. In SSSD, DMU Description was MUID.

6. A message appears indicating that one row was added to the Data Mapunit table. Click **OK**.

Examining the Data Mapunit Tables

1. On the **View** menu, choose **Find Related**, then **Data Mapunit**.

   Note: NASIS will find the related data mapunit, open the table, and place the highlight cursor on the DMU ID.

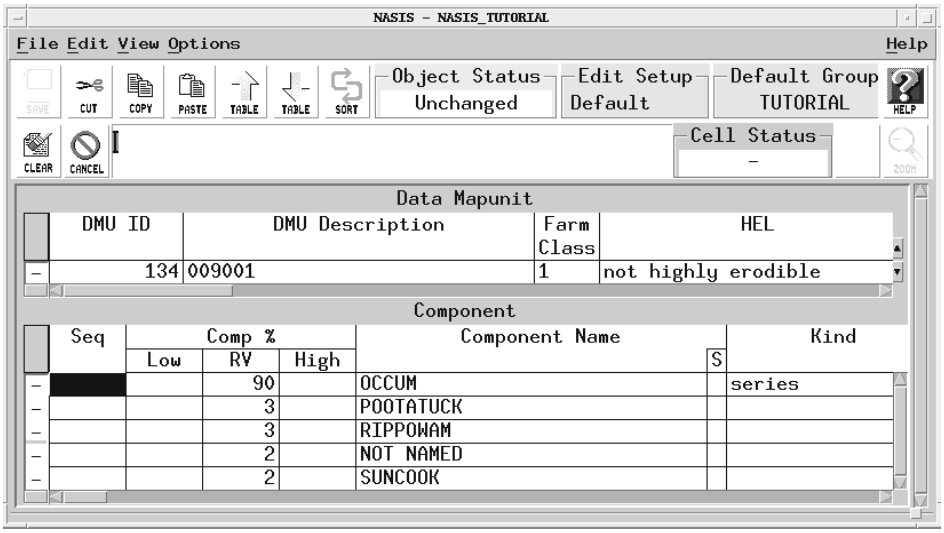


2. Use the **Help** button to examine the table explanation and data element explanations in the Data Mapunit table.

   Note: You may want to coordinate data mapunit descriptions throughout the MO region. On a separate note, data such as Farm Class and HEL are related to the data mapunit.

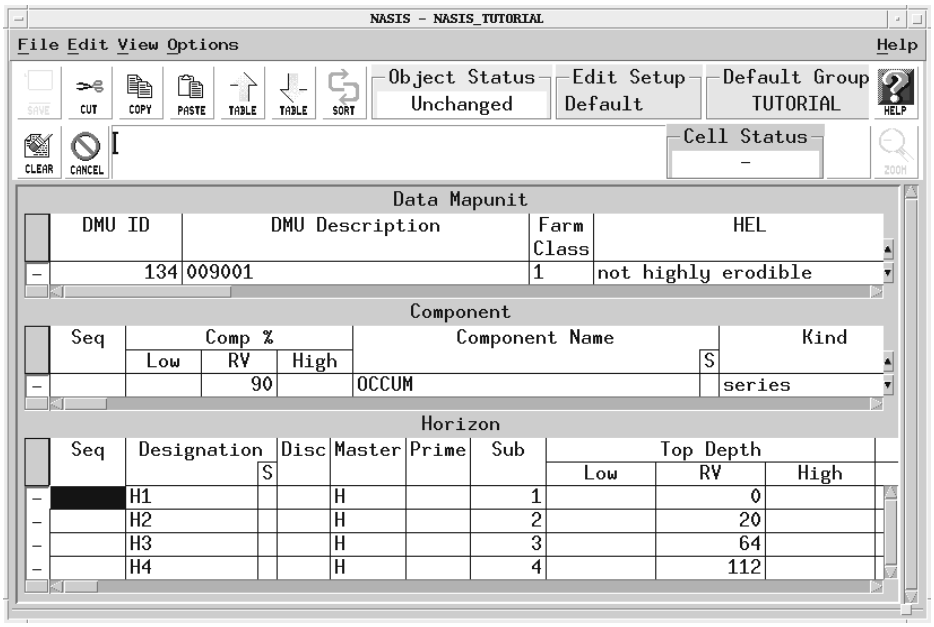
3. When you are ready to examine the Component table, click the **Down table** button.

4. Examine the Component table (resized and displayed here).



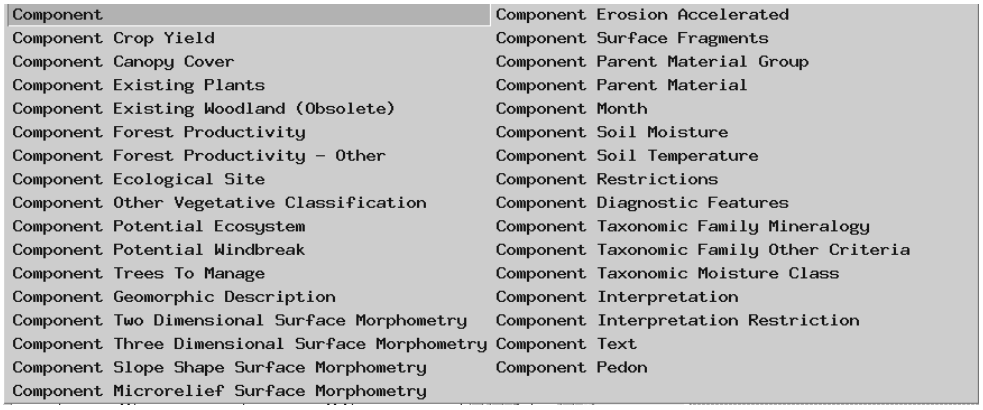
5. To examine the Horizon table, click the **Down table** button. The Horizon table appears (resized and shown on the next page).

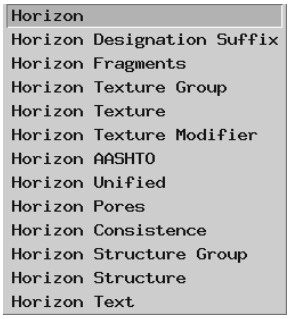
   Note: The selected set now contains all six area types in the database and their areas, one legend and all of its mapunits, and the data mapunit records for one of the mapunits (Mapunit Symbol 1).



Note: The Horizon table shows some of the data related to the Occum component in Mapunit 1—Occum. Other tables in the Data Mapunit object (shown on the following Component and Horizon menus and accessed through the View menu) have additional physical, chemical, and morphological properties, as well as interpretations.

The View menu provides direct access to two submenus that list tables within the Data Mapunit object. They are the Component and Horizon submenus. Shown below, they provide access to many of the tables within the object.





Note: The Down table button initially follows a default path (shown by heavy arrows in Figure 6-5 on page 6.9). For example, the default path from the *Horizon* table is to the *Horizon Texture Group* table. However, if from the View menu you choose a different table path—for example, you choose *Horizon* then *Horizon Fragments*—the editor remembers this, and the Down table button follows the new path until you change it again or exit NASIS.

Examining Restricted Tables

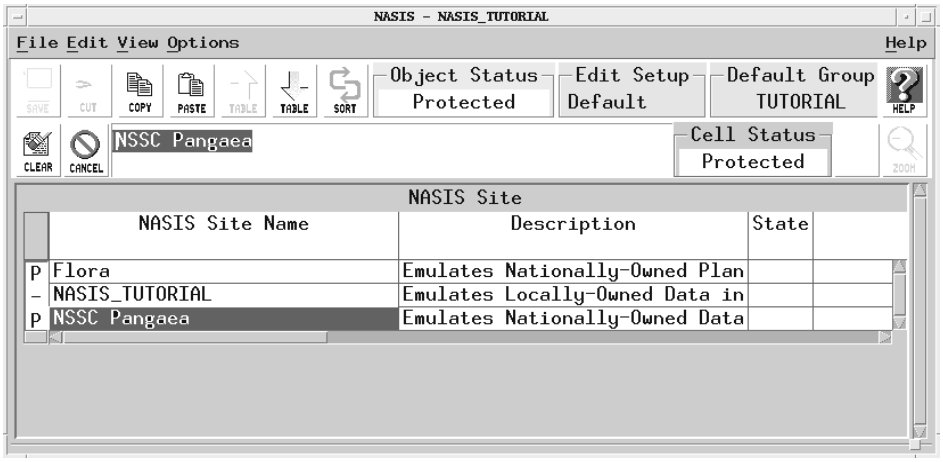
The rest of this lesson repeats the process of locating tables in different objects. Specifically, it discusses tables that contain information related to some map unit tables, but which are owned by groups such as Pangaea or Flora and not editable by most users. Refer to Database Security, pages 1.9-10 for more information on object ownership and access.

If you do not wish to examine the other tables and columns at this time, you may want to continue with Chapter 11.

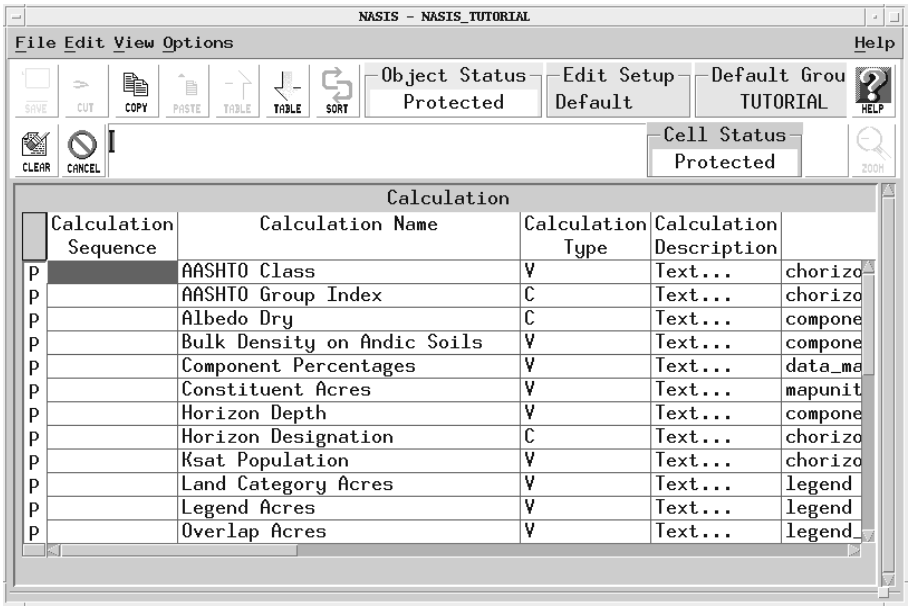
Examining the Calculation Table

Several columns in the map unit tables can be calculated from information entered in other columns. Calculable columns contain a source field that indicates whether the calculable column was calculated (C), or entered manually (M), or populated during conversion. Only users belonging to the Pangaea group can enter or modify calculations. However, other users may view them to better understand how data for a field is calculated.

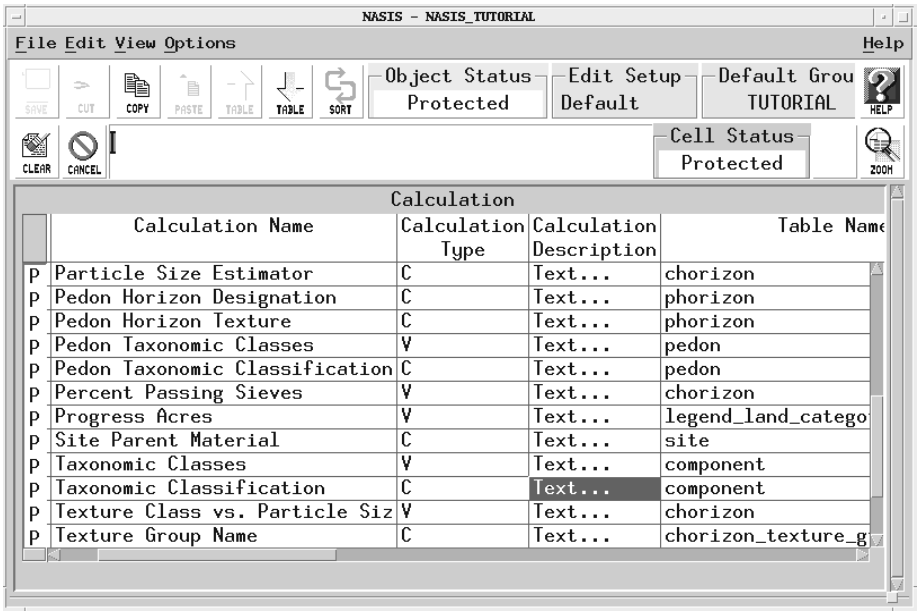
1. On the **View** menu, choose **Calculations** then **Calculation**. The table is empty.
2. To load data into the table, select **View**, **NASIS Sites**, then **NASIS Site**.
3. Highlight **NASIS_PANGAEA**.



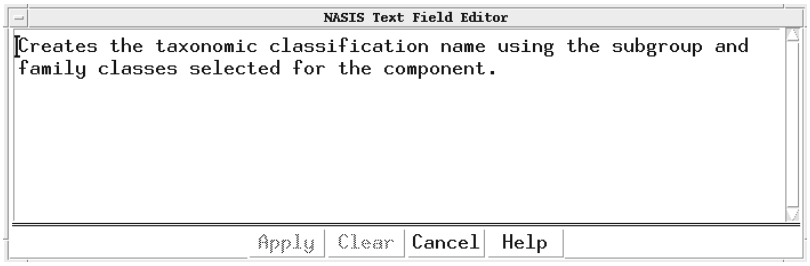
4. On the **File** menu, select **Load Related**, then **Calculation**.
5. A message reports that thirty rows were added to the Calculation Table. Click **OK**.
6. On the **View** menu, select **Calculations**, then **Calculation**. Look at the data loaded into the Calculation table.



7. Scroll down to the Taxonomic Classification row. Position your cursor in the **Calculation Description** column of the Taxonomic Classification row.

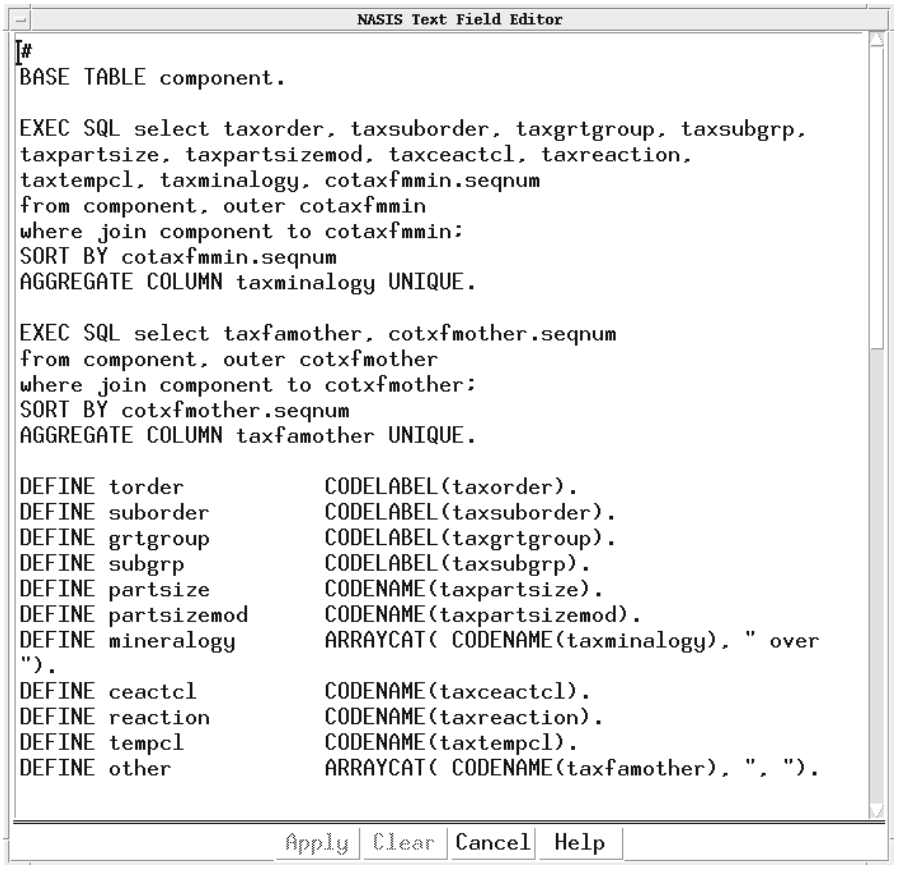


8. Click the **Zoom** button.



Note: This calculation is used in the Component table. The can also be shown when the Calculation Manager is selected within the Component table.

9. Click **Cancel** to return to the Calculation table.
10. Tab to the right until your cursor is positioned in the **Calculation** column.
11. Click **Zoom**.



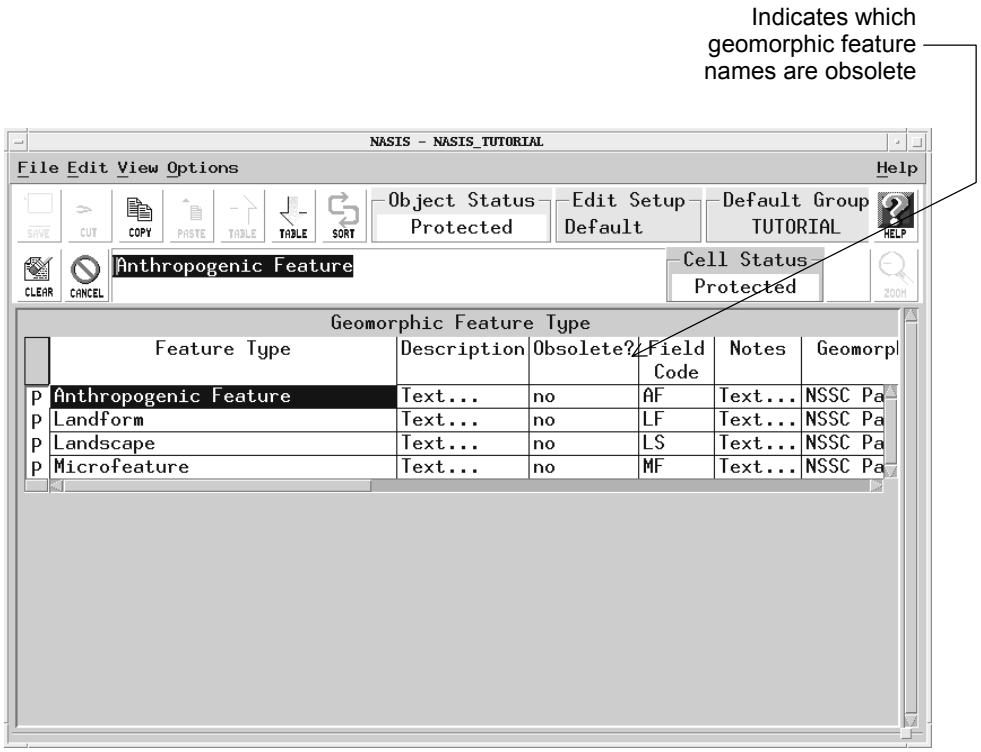
Note: Calculations are written using the report writing language.

Examining the Geomorphic Feature Type Tables

So far, you have looked at mostly map unit data tables. In this section, you will look at how NASIS stores the geomorphic data and how it records component landform, landscape, microfeatures, and anthropogenic features. These objects are owned by the NSSC Pangaea site and the Geomorphic staff group in Lincoln, so you can't edit them. But by loading them and looking at the data, you can get a good understanding of them.

1. On the **View** menu, choose **Geomorphic Features**, then **Geomorphic Feature Type**. The table is empty.
2. To load data into the table, select **View**, **NASIS Sites**, then **NASIS Site**.
3. Select the **NASIS_ADMIN** site.

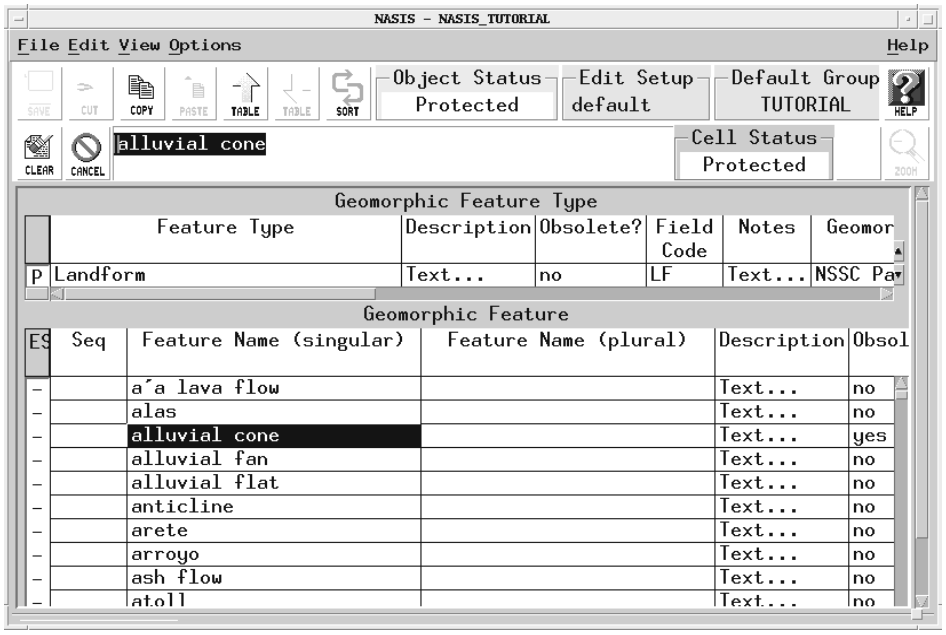
4. On the **File** menu, choose **Load Related**, then **Geomorphic Feature Type**.
5. A message reports that four rows were added to the Geomorphic Feature Type table. Click **OK**.
6. On the **View** menu, select **Geomorphic Features**, then **Geomorphic Feature Type**.



Note: The Geomorphic Feature Type table lists the kinds of feature types available on a choice list in the Component Geomorphic Description table. For more information on this table and its data elements, use the Help button.

7. Browse through the data in this table.
8. Highlight **Landform** and click the **Down table** button to open the Geomorphic Feature table.

   Note: The Geomorphic Feature table contains the official list of geomorphic terms approved by the National Soil Survey Center (NSSC). Again, use the Help button for more detailed information on the table and its data elements.



Note: This table indicates which feature names are obsolete. Notice that alluvial cone is an obsolete feature. That means alluvial cone should not appear on the Feature Name choice list for landform in the Component Geomorphic Description table. Certain data elements are obsolete. The data should be updated with new names or codes. Although NASIS still stores many old data element names and codes, you are encouraged not to use them.

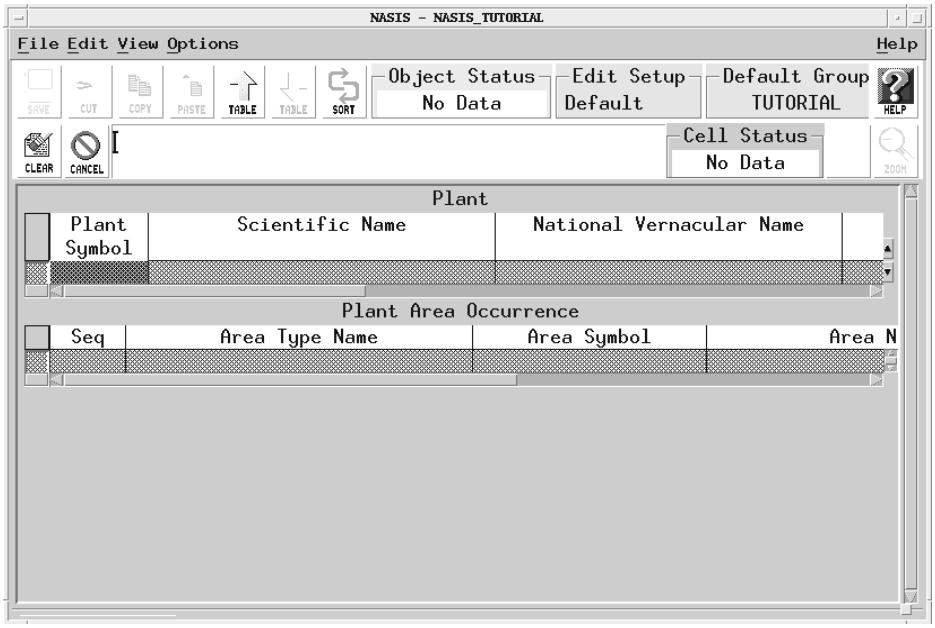
9. After browsing through the table, go on to the next section.

Examining the Plant Tables

The Plant tables are a copy of the official national plant database (called *Flora*) which contains approximately 80,000 records. These tables are used as the official lookups (choice lists). Because the objects are owned by the Flora site, the tables are protected from editing.

In the first two versions of NASIS, plant data was stored in a single table populated from the SSSD *plantnum* table during conversion to NASIS. The plant data has been restructured into the three new plant tables introduced here.

1. On the **View** menu, choose **Plants** then **Plant**.
2. Click the **Help** button, then click the **Plant** table name to read the description.
3. Click the **Down table** button to see the **Plant Area Occurrence** table.
4. Again, use the **Help** button to learn more about this table.



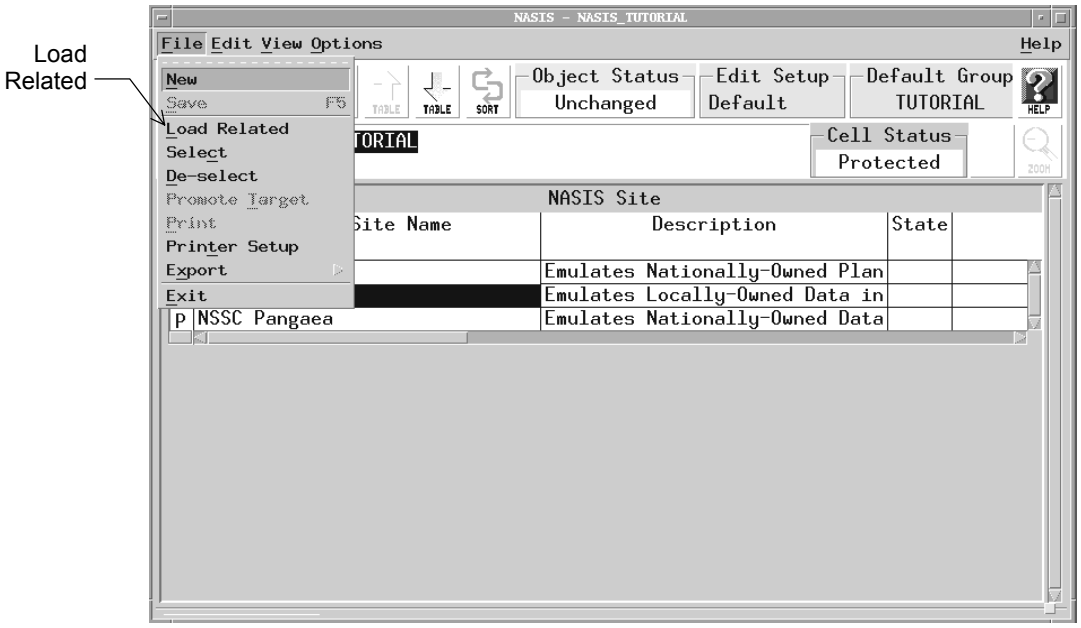
5. To see the third plant table, on the **View** menu, select **Plants**, then **Plant Synonym**.

   Note: Do not attempt to load the entire plant list. Eighty-thousand records take a very long time to load. Also, if you try to load all the plants into a selected set that you have edited but not saved (or one you plan to make edits to after loading the plants), the Save function will take a very long time and will likely fail. If you do attempt to load the entire plant list, after five seconds of processing you will get a message about cancelling the process. If you cancel the process, your selected set may contain a partial list.

Examining the Local Plant Table

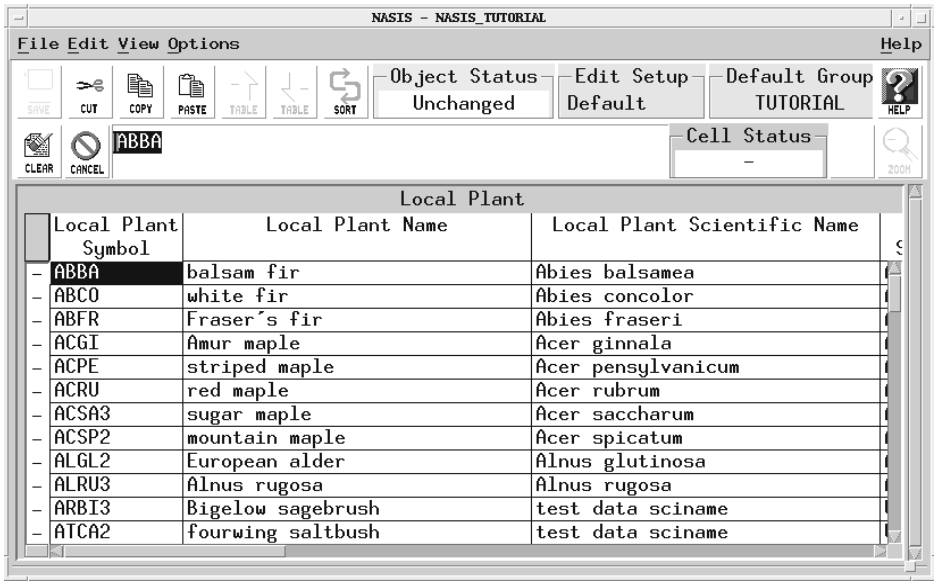
The official national plant list is approximately 80,000 records. To manage its use efficiently, NASIS provides a way to build a subset of the entire official plant list. The subset is essentially a plant lookup table referred to as the *Local Plant* table. The local plants are owned objects, just like legends and data mapunits. The local plant object is owned by the database that creates it, and local NASIS users can be given permission to add, modify, and delete records in these tables.

12. On the **View** menu, choose **Local Plants** then **Local Plant**. The table is empty.
13. To load data into the table, select **View**, **NASIS Sites**, then **NASIS Site**.
14. Highlight **NASIS_TUTORIAL**. (When you're running NASIS outside the tutorial, you would select your local site with plants being used in your state.)
15. On the **File** menu, select **Load Related**, then **Local Plant**. (See the sample screen on the next page.)



16. A message reports that eighty-one rows were added to the Local Plant Table. Click **OK**.

17. On the **View** menu, select **Local Plants**, then **Local Plant**. Look at the data loaded into the Local Plant table.



Note: This table is a customized local list linked to the official plants database. The National Plants Site is called *Flora*. In the Plant Symbol column, you can activate the choice list, select *Flora* as the NASIS Site, then retrieve plant symbols from the national plants list.

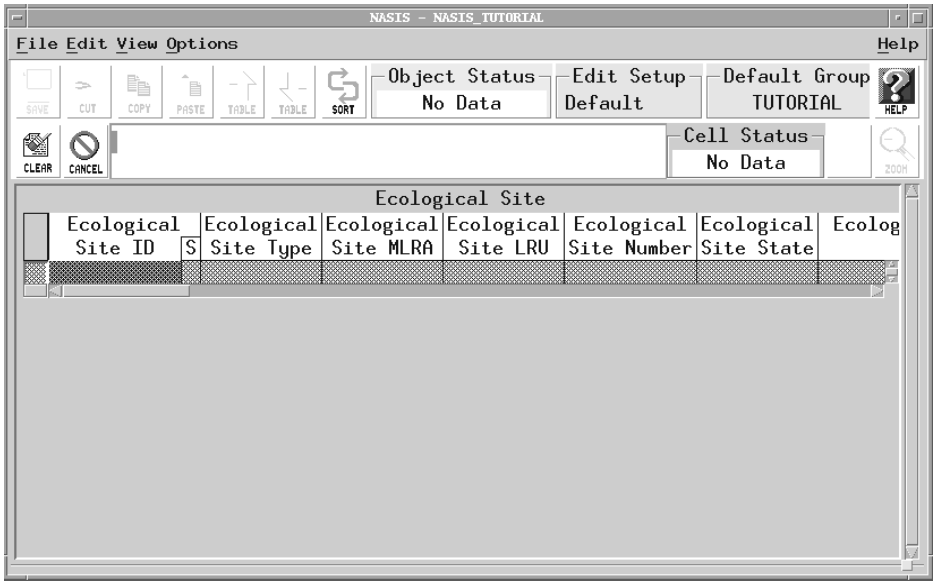
Examining the Ecological Site Table

The Ecological Site table records the official list of range and forest ecological sites that are described in the Ecological Site Information System (ESIS). This table

records only the identifier and name of an ecological site. The complete ecological site characterization resides in the ESIS database.

1. On the **View** menu, choose **Ecological Sites,** then **Ecological Site**.
2. To load data into the table, select **View**, **NASIS Sites**, then **NASIS Site**.
3. Highlight **NASIS_PANGAEA**.
4. On the **File** menu, select **Load Related**, then **Ecological Site**.

   Note: A message indicates that no rows were added to the Ecological Site table. The database has not yet been populated. Once the data is available, this will be the method of access.

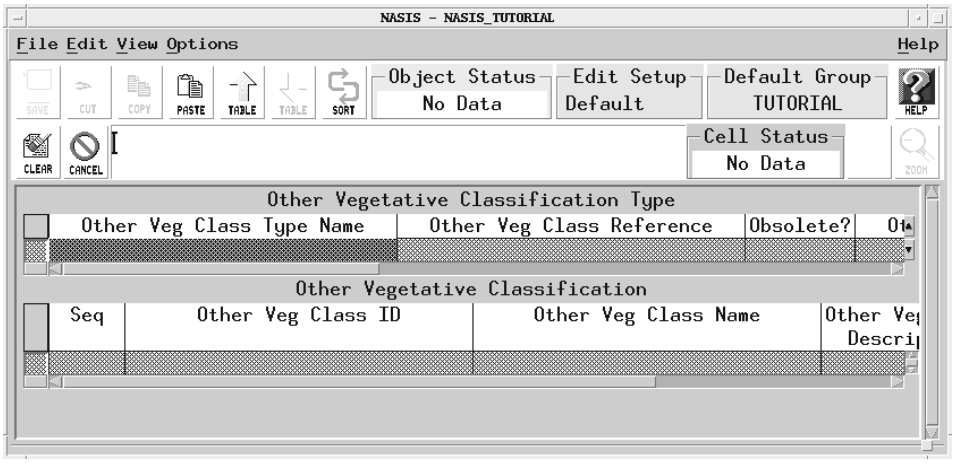


Examining the Other Vegetative Classes Tables

The Other Vegetative Classes tables record vegetation classification types and sites other than those defined according to NRCS standards. An example is the USFS forest habitat type. The individual sites that belong to each classification type are recorded in the Other Vegetative Classification Table.

5. On the **View** menu, choose **Other Veg Classes,** then **Other Vegetative Classification Type**.
6. Click **Down table**.
7. To load data into the table, select **View**, **NASIS Sites**, then **NASIS Site**.
8. Highlight **NASIS_PANGAEA**.
9. On the **File** menu, select **Load Related**, then **Other Vegetative Classification Type**.

   Note: A message indicates that no rows were added to the Other Vegetative Classification Type table. The database has not yet been populated. Once the data is available, this will be the method of access.



Note: You have completed Chapter 10. Now that you are familiar with the data tables, go on to Chapter 11to begin using some of the NASIS editing functions.